Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

CARBO Ceramics Inc
CARBO Ceramics Inc - New Iberia
New Iberia, New Iberia Parish, Louisiana
Agency Interest Number: 5051
Activity Number: PER20080002
Proposed Permit Number: 1260-00027-V3

I. APPLICANT

Company:
CARBO Ceramics Inc - New Iberia
4810 Industrial Dr
New Iberia, Louisiana 70560-8145

Facility:
CARBO Ceramics - New Iberia Facility
4810 Industrial Dr.
New Iberia, Iberia Parish, Louisiana
Latitude: 30° 2' 50.7", Longitude 91° 52' 37.2"

II. FACILITY AND CURRENT PERMIT STATUS

CARBO Ceramics, Inc. is the owner and operator of the New Iberia facility, an existing ceramic manufacturing plant. The New Iberia facility began operation in 1978 under the name Carborundum. The New Iberia Carborundum facility was purchased in 1987 and the name was changed to CARBO Ceramics, Inc.

CARBO Ceramics - New Iberia Facility is a designated Part 70 source. The New Iberia facility currently operates under Permit No. 1260-00027-V2, issued November 26, 2008, summarized below:

The following sources are to be added to the permit with this permit modification.

Permit No.	Unit or Source	
1260-00027-V3	EQT075	NI08-01 – RC Heater
	EQT074	NI08-02 – RC Thermal Oxidizer
	EQT076	NI08-03 – RC Nuisance Dust Collector
	EQT077	BC060 – RC Proppant Cooler Discharge Conveyor

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Permit No.	Unit or Source	
	EQT078	BC061 – RC Proppant Rotex Screener Discharge Conveyor
	EQT079	BE017 – RC Proppant Cooler Discharge Bucket Elevator
	EQT080	BE018 – RC Proppant Silo Bucket Elevator
	EQT081	SE006 – RC Proppant Rotex Screener
	EQT082	BC051 - RC Cooler Transfer Belt Conveyor
	EQT083	BC053 - RC Transfer Belt Conveyor
	EQT084	BC054 - RC Proppant Feed Belt Conveyor
	EQT085	BC056 - Cone Crusher Feed Belt
	EQT086	BC057 - Cone Crusher Product Belt
	EQT087	BC058 - RC Hopper Discharge Belt Conveyor
	EQT088	BC059 - No. 1 Uncalcined Belt Conveyor
	EQT089	BE014 - RC Raw Materiaol Bucket Elevator
	EQT090	BE015 - RC Proppant Feed Bucket Elevator
	EQT091	BE016 - RC Finished Product Bucket Elevator
	EQT092	SB001 - RC Proppant Storage Bin
	EQT093	SB002 - RC Proppant Day Bin
	EQT094	SE005 - RC Grizzly Screen
	EQT095	CR001 - Cone Crusher
	EQT096	SE007 – No. 1 Raw Material Grisley Screen
	EQT097	BC062 – RC Raw Material Unloading Conveyor
	EQT098	BC063 – RBT Transloader
	EQT099	CR002 - Crusher

III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application and Emission Inventory Questionnaire were submitted by CARBO Ceramics, Inc. on September 30, 2008 requesting a modification to the Part 70 operating permit. Additional information dated November 17, December 23, 2008, March 4, June 1, 15, 30, August 3, 4, and 14, 2009, was also received.

Project

CARBO Ceramics, Inc. operates two (2) proppant plants at the New Iberia facility which produces ceramic media and ceramic proppant through the sintering of bauxite and clay materials. Ceramic proppant is used, primarily, in the hydraulic fracturing process of natural gas and oil wells to increase their productivity of valuable natural resources. Technically engineered ceramic material is marketed for applications in the foundry metal casting and industrial mineral grinding industries as an alternative to silica and specialty sands.

Raw material feed stocks for the facilities are calcined bauxites and clay obtained from domestic and foreign sources and titanium dioxide.

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In either plant, the process is essentially the same and other than the difference in physical size, the differences are minor and related to the processing equipment.

Raw materials are crushed to a fine particle size in a ball mill, separated by particle size and then transported to a silo to be used as feed for pelletizers. Dust collectors are used at the milling and palletizing step to recover the fine dust and return it for processing. Ground dust is then agglomerated (pellitized) into a range of pellet sizes. These pellets are then dried in a rotary dryer burning natural gas. Again a dust collector is used at the dryer to collect dust to be returned for palletizing. Pellets proceed to the rotary kiln for firing. The rotary kiln calcines the pellets and then discharges those into a rotary cooler. Cooled proppants are then screened and sent to storage or to customer via truck or rail. Dust collectors are employed at the kiln and screening operations.

In Permit No. 1260-00027-V2, CARBO Ceramics sought a modification to allow for operational flexibility at the New Iberia facility. The SO_2 emissions from the three Kiln Dust Collector Stacks (EQT006, NI82-12 - Kiln #1 Dust Collector Stack, EQT007, NI81-12 - Kiln #2 Dust Collector Stack, and EQT008, NI83-12 - Kiln #3 Dust Collector Stack) were limited to 247.69 TPY through an emissions cap. CARBO monitors the processing rate of material to the kilns and also the clay sulfur content to ensure the SO_2 emission rate remains below the CAP over a 12-month rolling average.

Resin Coating Facility Project

CARBO Ceramics intends to install a new resin coating facility at the New Iberia Facility. The new resin coating facility will produce resin-coated proppant to be used in the hydraulic fracturing process in the natural gas and oil industry.

The resin coated proppant is produced in batches. Feed proppant is weighed and fed to a natural gas fired heater. The heater is designed to fire up to 5 MM BTU/hr of natural gas. The heated proppant is fed to the batch mixer. The heater products of combustion are routed to atmosphere through the heater stack (EQT075, NI08-01 – RC Heater).

In the batch mixer, the hot proppant is mixed with a proprietary mix of resin products and water. Once the materials are fully mixed and reacted in the batch mixer, the batch is sent to the continuous mixer. The batch mixer is vented to a natural gas fired thermal oxidizer (EQT074, NI08-02 – RC Thermal Oxidizer) for control of VOC and HAP emissions.

The continuous mixer completes the mixing of the batch to produce the uniform high quality product desired for each batch. Once the batch is completed it is sent to the cooler. The continuous mixer is vented to EQT074 for control of VOC and HAP emissions.

The cooler removes the residual heat from the finished batch. The cooler is vented to EQT076, NI08-03 – RC Nuisance Dust Collector, for particulate control.

For raw material and finished product handling, there are numerous screw conveyors, bucket elevators, feed hoppers, vibratory feeders, and belt conveyors which either have dust collection headers that are vented to EQT076 for particulate control or are included in one of the Fugitive CAP sources.

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CARBO is revising the fugitive emission CAPS to distinguish the sources based on NSPS applicability and location at the site.

- GRP002, FUG001 - Non-NSPS Outside Fugitive Emissions CAP;
- GRP003, FUG002 - NSPS Outside Fugitive Emissions CAP;
- GRP005, FUG003 - Plant 1 Non-NSPS Inside Fugitive Emissions CAP;
- GRP006, FUG004 - Plant 1 NSPS Inside Fugitive Emissions CAP;
- GRP007, FUG005 - Plant 2 Non-NSPS Inside Fugitive Emissions CAP;
- GRP008, FUG006 - Plant 2 NSPS Inside Fugitive Emissions CAP.

The source EQT074 receives vent streams from the batch mixer and continuous mixer. The thermal oxidizer is designed to achieve a 98% or greater VOC destruction efficiency.

In addition to the new resin coating facility, CARBO is requesting to add a cone crusher, crusher feed belt and crusher product belt to the existing ceramic proppant and ceramic media production facility. The Resins Coating project is adding a cone crusher, unloading conveyor, transloader, and grizzley screen. The additional equipment does not result in a production increase and will be located inside a building and will result in minor PM emission increases.

Proposed Permit

Permit No. 1260-00027-V3 is a minor modification of Part 70 operating permit no. 1260-00027-V2 for the New Iberia Facility.

Permitted Air Emissions

Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
PM_{10}	152.91	158.55	+ 5.64
SO_2	248.69	248.71	+ 0.02
NO_X	225.42	228.64	+ 3.22
CO	34.88	37.59	+ 2.71
VOC *	0.82	3.80	+ 2.98

* VOC LAC 33:III.Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before	After	Change
Formaldehyde	-	1.14	+ 1.14
Phenol	-	1.66	+ 1.66
Total		2.80	+ 2.80

Non-VOC LAC 33:III.Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before	After	Change
Ammonia	-	< 0.01	+ < 0.01

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IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

Applicability and Exemptions of Selected Subject Items

Shown in the tables below.